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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,739	01/11/2002	Masahiro Ono	2002-0013A	8286
513	7590	04/28/2004	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			HA, NATHAN W	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,739

Applicant(s)

ONO ET AL.

Examiner

Nathan W. Ha

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1,4/02.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 15-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 6,261,941, newly cited, hereinafter Li) and in view of Omoya et al. (US 5,641,996, newly cited, hereinafter, Omoya.)

In regard to claim 15, 18, in fig. 5, Li discloses a circuit substrate 27 to be used for packaging a semiconductor device, comprising:

a main body having input/output terminal electrodes 34 on a surface thereof, with each of said input/output terminal electrodes having

(i) a first surface that opposes said surface of said main body, and

(ii) a second surface that faces in a direction opposite to that in which said first surface faces;

conductive portions 45 and 47 on said input/output terminal electrodes, with each of said conductive adhesive portions having

(i) a first surface that opposes said second surface of a respective one of said input/output terminal electrodes, and

(ii) a second surface that faces in a direction opposite to that in which said first surface faces; and

a resin film 54 on said surface of said main body and covering said input/output terminal electrodes along with said conductive adhesive portions such that said resin film covers said first and second surfaces of said input/output terminal electrodes and also covers said first and second surfaces of said conductive adhesive portions.

Li however does not expressly disclose that the conductive layer is a conductive adhesive layer.

Omoya, in fig. 1, discloses an analogous semiconductor package including terminal 5 and conductive adhesive 4 in order to improve the connections between the substrate and chip since adhesive provides high level of flexibility. See also, col. 9, lines 10-15.

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to substitute the conductive adhesive as taught by Omoya in Li's in order to improve the connections between the substrate and chip since adhesive provides high level of flexibility.

In regard to claim 16, Li further discloses wherein said resin film contacts said second surface of said conductive adhesive portions. See also, fig. 5.

In regard to claim 17, Li further discloses wherein said resin film contacts said second surface of said input/output terminal electrodes. See also fig. 5.

In regard to claim 19, Omoya further discloses a semiconductor device 1 is mounted on the circuit substrate, and

wherein said conductive adhesive portions are positioned on said one surface so as to correspond with said input/output terminal electrodes. See fig. 1.

In regard to claim 20, wherein said resin film, with said conductive adhesive portions on said one surface thereof and with said elastomer layer 54 on said opposite surface thereof, is initially separate from said main body and is then attached to said main body. See Li's fig. 8

In regard to claims 21 and 22, 24, wherein the elastomer layer is inherently softer and more elastic than said resin film. See also, col. 5, lines 10-19.

In regard to claim 23, Omoya further discloses a semiconductor device having bump electrodes 3 that are electrically and mechanically connected to said conductive adhesive and to said input/output terminal electrodes, said bump electrodes being in contact with said input/output terminal electrodes; and

resin between said circuit substrate and said semiconductor device, said resin bonding and fixing said semiconductor device to said circuit substrate. See also Omoya's fig. 1.

In regard to claims 25 and 28, wherein said resin comprises a resin film or a sealing resin. See Li's fig.5.

In regard to claims 26-27 and 29-30, Omoya further discloses that wherein said bump electrodes pass through said resin film or sealing resin. See Omoya's fig. 3.

Response to Arguments

2. Applicant's arguments with respect to claims 15-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Nathan Ha

April 19, 2004



LONG PHAM
PRIMARY EXAMINER